

**IN THE CLAIMS:**

Please write the claims as follows:

Please cancel claim 11 without prejudice.

1    1. (Currently Amended)      A method for initiating a peer-to-peer communication ses-  
2    | sion, the method comprising ~~the steps of:~~  
3            attempting a first remote direct memory access (RDMA) read operation directed  
4    | to a cluster partner having an operating system, the RDMA read operation bypassing the  
5    | operating system;  
6            performing, in response to a successful first RDMA read operation, a first RDMA  
7    write operation to the cluster partner;  
8            performing, in response to a successful RDMA write operation, a second RDMA  
9    read operation directed to the cluster partner; and  
10           performing, in response to a successful second RDMA read operation, a second  
11   RDMA write operation to the cluster partner.

1    2. (Original)    The method of claim 1 wherein the step of attempting a first RDMA read  
2    operation further comprises the step of issuing a RDMA read operation to the cluster  
3    partner requesting a pre-set memory address location that is associated with a status vari-  
4    able on the cluster partner.

1    | 3. (Currently Amended)      The method of claim 1 further comprising ~~the steps of:~~  
2            exchanging a set of peer connection information;  
3            passing a set of client information to the cluster partner;  
4            creating a set of appropriate communication ports;  
5            alerting the cluster partner of a ready status; and

6            alerting a set of clients that the cluster partner is in a ready state.

1    4. (Original)    The method of claim 3 wherein the set of peer connection information  
2    comprises a version number.

1    5. (Currently Amended)        The method of claim 1 wherein the step of passing a set of  
2    client information to the cluster partner further comprises ~~the steps of~~:  
3            collecting, from a set of clients, the set of client information; and  
4            transferring the collected set of client information to the cluster partner.

1    6. (Original)    The method of claim 5 wherein the client information comprises a number  
2    of communication ports required.

1    7. (Original)    The method of claim 5 wherein the set of client information further com-  
2    prises an amount of memory requested by a particular client.

1    8. (Original)    The method of claim 1 wherein the cluster partner is a storage system.

1    9. (Original)    The method of claim 1 wherein the cluster partner is an application server.

1    10.-12. (Cancelled)

1    13. (Currently Amended)        A method for initiating a peer-to-peer communication ses-  
2    sion, the method comprising ~~the steps of~~:  
3            performing a first remote direct memory access read operation directed to a clus-  
4    ter partner having an operating system, the RDMA read operation bypassing the operat-  
5    ing system; and  
6            performing, in response to a successful first remote direct memory access read  
7    operation, a first remote direct memory access write operation to the cluster partner.

1 14. (Original) The method of claim 13 wherein the first remote direct memory access  
2 read operation is performed over a Virtual Interface connection having a pre-determined  
3 and pre-assigned Virtual Interface Number and a pre-determined Fibre Channel ID.

1 15. (Currently Amended) A method comprising ~~the steps of:~~  
2 (a) initiating a peer-to-peer communication session which bypasses an operating  
3 system on a storage system by attempting a first remote direct memory access read opera-  
4 tion directed to a predefined hardware address and a predefined port number, the prede-  
5 fined hardware address and the predefined port number previously known to support a  
6 RDMA operation; and  
7 (b) performing, in response to a successful step (a), a first remote direct memory  
8 access write operation directed to the predefined hardware address and the predefined  
9 port number.

1 16. (Currently Amended) The method of claim 15 further comprising ~~the step of:~~  
2 (c) performing, in response to a successful step (b), a second remote direct mem-  
3 ory access read operation directed to the predefined hardware address and the predefined  
4 port number.

1 17. (Original) The method of claim 15 wherein the predefined hardware address com-  
2 prises a fibre channel identifier.

1 18. (Original) The method of claim 15 wherein the predefined port number comprises a  
2 virtual interface.

1 19. (Original) The method of claim 15 wherein the first remote direct memory access is  
2 delivered to a predefined memory address storing booting status information.

- 1 20. (Currently Amended) A system configured to establish reliable peer-to-peer  
2 communication among storage systems of a clustered environment, the system compris-  
3 ing:  
4 | a peer process executing on each storage system partner having an operating sys-  
5 tem; and  
6 | a cluster connection manager executing on each storage system partner, the clus-  
7 ter connection manager establishing a reliable peer-to-peer connection between each peer  
8 process by connecting to a predetermined port number using a predetermined network  
9 | address, the reliable peer-to-peer connection bypassing the operating system.
- 1 21. (Original) The system of claim 20 wherein the reliable peer-to-peer connection is  
2 established without requiring a storage operating system executing on each storage sys-  
3 tem partner to be fully functioning.
- 1 22. (Original) The system of claim 20 wherein the peer-to-peer connection is a virtual  
2 interface connection.
- 1 23. (Original) The system of claim 20 wherein the peer process is a cluster connection  
2 client that requests services from the cluster connection manager.
- 1 24. (Currently Amended) A system configured to open an initial peer-to-peer connec-  
2 tion over a cluster interconnect, the system comprising:  
3 | a storage system having an operating system;  
4 | a cluster connection manager executing on the storage system, the cluster connec-  
5 tion manager configured to establish a peer connection on a predetermined port number  
6 | and using a predetermined network address within the storage system the peer-to-peer  
7 connection bypassing the operating system; and  
8 | a process executing on the storage system, the process configured to use the estab-  
9 lished peer connection for communication.

1 25. (Previously Presented) The system of claim 24 wherein the peer-to-peer connec-  
2 tion is a virtual interface connection.

1 26. (Previously Presented) The system of claim 24 wherein the process executing on  
2 the storage system is a cluster connection client that requests services from the cluster  
3 connection manager.

1 27. (Previously Presented) The system of claim 24 wherein the process executing on  
2 the storage system communicates with a cluster partner using the established peer con-  
3 nection.

1 28. (Currently Amended) A system configured to accept the initiation of a peer-to-  
2 peer connection over a cluster interconnect, the system comprising:  
3 | a storage system having an operating system;  
4 | a cluster connection manager executing on the storage system, the cluster connec-  
5 tion manager configured to accept a peer connection on a predetermined port number and  
6 | using a predetermined network address within the storage system the peer-to-peer con-  
7 | nection bypassing the operating system; and  
8 | a process executing on the storage system, the process configured to read infor-  
9 mation from the established peer connection.

1 29. (Previously Presented) The system of claim 28 wherein the peer-to-peer connec-  
2 tion is a virtual interface connection.

1 30. (Previously Presented) The system of claim 28 wherein the process executing on  
2 the storage system is a cluster connection client that requests services from the cluster  
3 connection manager.

1 31. (Previously Presented) The system of claim 28 wherein the process executing on  
2 the storage system reads information from a cluster partner.

1 32. (Previously Presented) The system of claim 28 wherein the information comprises  
2 heartbeat signals.

1 33. (Currently Amended) A method comprising:  
2 | initializing a first remote direct memory access (RDMA) read operation that by-  
3 | passes the operation system and is directed to a specific cluster partner before a higher  
4 virtual interface layer has fully initialized, using a specific port number and a specific ad-  
5 dress that support a RDMA operations; and  
6 performing a second RDMA read operation directed to a specific cluster partner  
7 before a higher virtual interface layer has fully initialized, using a specific port number  
8 and a specific address that support a RDMA operations.

1 34. (Currently Amended) A system configured to accept the initiation of a peer-to-peer  
2 connection over a cluster interconnect, the system comprising:  
3 | a storage system having an operating system;  
4 a cluster connection manager executing on the storage system, the cluster connec-  
5 tion manager configured to initialize a first remote direct memory access (RDMA) read  
6 | operation that bypasses the operation system and is directed to a specific cluster partner  
7 before a higher virtual interface layer has fully initialized and use a specific port number  
8 and a specific address that support RDMA operations; and  
9 a process executing on the storage system, the process configured to use the estab-  
10 lished peer-to-peer connection for communication.

1 35. (Currently Amended) A computer readable medium for accepting the initiation of a  
2 peer-to-peer connection over a cluster interconnect, the computer readable medium in-  
3 cluding program instructions when executed adapted to:  
4 | attempting a first remote direct memory access (RDMA) read operation that by-  
5 passes the operation system and is directed to a cluster partner;  
6 performing, in response to a successful first RDMA read operation, a first RDMA  
7 write operation to the cluster partner;  
8 performing, in response to a successful RDMA write operation, a second RDMA  
9 read operation directed to the cluster partner; and  
10 performing, in response to a successful second RDMA read operation, a second  
11 RDMA write operation to the cluster partner.